

APPLICATION

FOR

UNITED STATES OF AMERICA

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SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

Be it known that I,

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have invented certain improvements in

“SHOWER APPARATUS”

of which the following description in connection with the accompanying drawings is a specification, like reference characters on the drawings indicating like parts in the several figures.

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# BACKGROUND OF THE INVENTION

The present invention relates to a shower apparatus.

Shower apparatuses are currently in use being usually constituted by an enclosure made of a rigid material, for example, glass, Plexiglas or other translucent or transparent material, which is placed for example in a corner of a suitable room or in a recess or along a wall.

The enclosure is therefore for example fixed on two sides to the walls of the room and rests in a downward region on a shower tray.

Resting on the shower tray occurs according to various solutions, since the lower end of the enclosure can rest on the entire upper rim of the shower tray or only on a part thereof, for example by using, on the region adjacent to the door, spacer pins which are arranged between the lower end of the enclosure and the upper rim of the shower tray.

The enclosure is usually constituted by a frame whereto a door is slidingly fixed or hinged.

The door can therefore be for example coupled in an upward region to the enclosure frame so that it can slide and can be guided in a downward region on a seat which is rigidly coupled above the upper rim of the shower tray.

As an alternative, the door can slide by resting, on a suitable gasket, on the upper rim of the shower tray.

The main drawback of these conventional shower apparatuses is that unsightly and scarcely hygienic deposits of scale and other matter, accumulations of dirt, mold and bacteria due to stagnation of water after use often form in the points of contact between the enclosure and the shower tray.

These stagnations are often due to difficulty in being able to dry and clean interstices that are present proximate to these resting points, such interstices being also awkward to access because they are arranged at floor level.

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Another drawback of conventional shower apparatuses is that they can require, in the resting regions, the presence of gaskets and/or silicone seals which, in addition to be prone to deterioration and unsightly, worsen the noted drawbacks due to water stagnation and entail an additional  
5 intervention during installation.

Another drawback consists in that water can escape due to the contact, which acts as a path for connection to the outside of the shower cubicle, between the enclosure, which is internally wet, and the rim of the shower tray, which is adjacent to the flooring that lies outside the shower cubicle.

10 Another drawback of conventional shower apparatuses is that they have a complicated adjustment, by means of shims, of the position of the enclosure with respect to the walls, this adjustment being necessary because the walls are never perfectly vertical and perpendicular to the floor.

### SUMMARY OF THE INVENTION

15 The aim of the present invention is to solve the above-noted problems, eliminating the drawbacks of the cited prior art, by providing a shower apparatus which is easy and straightforward to install and clean, avoiding the presence of water stagnation regions which cause, for example, the formation of scale deposits.

20 Within this aim, an object of the invention is to provide a shower apparatus which prevents the escape from the shower cubicle even of minimal amounts of water, thus avoiding the need to subsequently dry up the escaped water and, even more importantly, avoiding the possibility of accidents caused by the fact that someone slips on said water.

25 Another object of the invention is to provide a shower apparatus which achieves the intended aim and objects without requiring the use of unsightly silicone seals and/or gaskets, which would also help to worsen the above-noted problems.

Another object of the invention is to provide a shower apparatus which is  
30 structurally simple and has low manufacturing costs.

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This aim and these and other objects which will become better apparent hereinafter are achieved by a shower apparatus, comprising an enclosure or a door and a shower tray, characterized in that said enclosure or door and said shower tray are mutually disconnected, said enclosure or door having means for adjustable connection to the walls that form the cubicle for accommodating the apparatus.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become better apparent from the following detailed description of a particular embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the shower apparatus according to the present invention;

Figure 2 is a perspective view of a detail of the wall anchoring and adjustment system;

Figure 3 is a sectional plan view of a detail of the wall anchoring and adjustment system at minimum extension;

Figure 4 is a sectional plan view of a detail of the wall anchoring and adjustment system at maximum extension;

Figure 5 is a sectional exploded plan view of the elements that compose the anchoring and adjustment system;

Figure 6 is a plan view of the invention;

Figure 7 is a side view of the invention; and

Figure 8 is a sectional side view of the shower tray, taken along a plane which is parallel to a wall.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures, the reference numeral 1 designates a shower apparatus which comprises an enclosure or door 2 and a shower tray 3.

The enclosure 2 is arranged in a shower cubicle, designated by the

reference numeral 4, which in this embodiment is delimited by two vertical walls 5a and 5b being advantageously perpendicular one another so as to form a shower corner which accommodates the apparatus 1.

5 The enclosure 2, seen in plan view, advantageously has a side which is shaped like a circular arc with the convexity facing outward; the enclosure is constituted by a frame, designated by the reference numeral 6, having a peripheral seat 50 inside which two glazing panels 7a and 7b are preferably arranged. The panels are advantageously rectangular and flat and are each arranged adjacent to the walls 5a and 5b.

10 An opening, designated by the reference numeral 8, is provided between the glazing panels 7a and 7b, advantageously in a central position, and is adapted to accommodate a door 9 which is preferably shaped like a circular arc and is coupled to the frame 6, preferably by means of two vertical hinges 10a and 10b which protrude from the frame along the same axis.

15 The apparatus 1 has appropriate means for the adjustable connection of the enclosure 2 to the walls 5a and 5b.

Since the connection means are identical for each wall, only the means for connection to the wall 5b are described for the sake of simplicity.

20 The connection means are constituted by a post, designated by the reference numeral 11b, which rests vertically on the wall 5b; by a first profiled element 12b, which is L-shaped and rigidly coupled to the frame 6; by first connection screws 13b for the removable connection of the post 11b to the wall 5b; and by second adjustment screws 14b for the adjustable connection of the mutual position between frame 6 and post 11b.

25 The post 11b is constituted by a second profiled element, designated by the reference numeral 15b, having advantageously a C-shaped transverse cross-section which has a base, designated by the reference numeral 17b, and two wings 18b which advantageously have the same dimensions and protrude, in the same direction, toward the wall 5b.

30 The base 17b of the second profiled element 15b is advantageously

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arranged parallel to the wall 5b and has first holes, not shown, which are adapted for detachable connection, by means of the first connecting screws 13b, to the wall 5b, in which adapted wall anchors are associated beforehand.

5 Locking elements are associated with the post 11b and are constituted by nuts 19b which are accommodated within the wings 18b and are provided with second threaded holes 20b which have a horizontal axis and are arranged at similar third holes 21b which are formed in the base 17b of the second profiled element, in a staggered position with respect to the first  
10 holes.

The second adjustment screw 14b has a threaded stem 22b which can be inserted, through said third and second holes 21b and 20b, in the locking element or nut 19b, and a head, designated by the reference numeral 23b, on the lateral surface 24b whereof there is an annular milling 25b.

15 The first profiled element 12b, which has an advantageously L-shaped cross-section, is arranged so as to have a first wing 26b being approximately parallel to the base 17b of the second profiled element and a second wing 27b being advantageously perpendicular to the first wing 26b.

At least one of the two wings 26b and 27b has surfaces for coupling,  
20 advantageously by welding or gluing, to the frame 6.

Two or more vertical slots, designated by the reference numeral 28b, are formed in the first wing 26b and are advantageously symmetrical with respect to a horizontal central plane and are blended, by means of a lateral milling 51, with the free peripheral edge 52 of the wing 26b.

25 The dimensions of the lateral milling 51 are such as to allow the insertion and sliding of the head 23b of the second adjustment screw 14b, so as to arrange the annular milling 25b at the thickness of the first wing 26b.

A lateral gap, designated by the reference numeral 29b and formed between the first wing 26b and the base 17b of the post 11b, allows access  
30 to the head 23b of the second adjustment screw 14b so as to allow partial

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screwing-unscrewing thereof for optimum positioning and centering of the enclosure 2.

A strip, designated by the reference numeral 30b, is advantageously magnetic and is substantially rectangular, and allows the connection  
5 between the first profiled element 12b and the post 11b, thus closing the lateral gap 29b.

Below the enclosure 2, and spaced from the lower peripheral rim 53 thereof, the shower tray 3 is rested on the ground and has, at least at an arc-like side designated by the reference numeral 31, a peripheral rim 32 which  
10 is raised with respect to an internal useful surface designated by the reference numeral 33.

The raised peripheral rim 32 has, in a transverse cross-section, a configuration which curves upward and increases in height advantageously in the part that lies under the door 9.

15 An internal channel 34 for collecting water is adjacent to the peripheral rim 32 and surrounds the internal useful surface 33.

The collection channel 34, arranged downward with respect to the lower peripheral rim 53 of the enclosure 2, is inclined on the plane in order to convey the water to a drain, designated by the reference numeral 35, which  
20 is advantageously arranged along the channel 34 proximate to the door 9.

Use is thus as follows: with reference to Figure 1, the first assembly operation consists in positioning and coupling, by way of conventional methods, the shower tray 3 to the floor of the cubicle 4 that accommodates the apparatus 1, which is conveniently arranged so as to rest laterally against  
25 the respective walls 5a and 5b.

Then the two posts are fixed, by means of the first connecting screws, to the respective walls 5a and 5b, so that the posts are conveniently arranged within the arc-like side 31 of the shower tray 3.

Then the enclosure 2 is assembled on the ground, associating the frame 6  
30 with the glazing panels 7a and 7b and with the door 9.

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Since the enclosure 2 is fully symmetrical, it can be turned upside down so as to determine at will the direction in which the door 9 opens.

The enclosure 2 is thus installed so as to be suspended on both posts by arranging the vertical slots in the respective annular millings formed in the heads of the adjustment screws.

It is thus possible to adjust the position and centering of the enclosure 2 with respect to the walls 5a and 5b by partially screwing or unscrewing the adjustment screws.

This intervention is allowed after installation because access to the adjustment screws occurs by means of the two lateral gaps that are present between the first profiled elements and the respective posts.

The gaps can be closed, once centering has been performed, by means of the appropriately provided strips, so as to protect the inside of the lateral gaps from water or any dirt and at the same time ensure an effective aesthetic impact.

During use, water flows by gravity from the internal surfaces of the enclosure 2 toward the lower peripheral rim 53 thereof, drips from there inside the shower tray 3, and is conveyed, by means of a system of slopes, first into the channel 34 and then into the drain 35.

It has thus been observed that the invention has achieved the intended aim and objects, a shower apparatus having been provided which is simple to install and easy and straightforward to clean, since there is no contact between the shower enclosure, which is suspended from two lateral posts, and the underlying shower tray.

The invention is of course susceptible of numerous modifications and variations, all of which are within the scope of the same inventive concept.

The materials used, as well as the dimensions that constitute the individual components of the invention, may of course be more pertinent according to specific requirements.

The disclosures in Italian Patent Application No. TV99A000127 from

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which this application claims priority are incorporated herein by reference.

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